Imagining Our Transportation Future
Puget Sound Regional Council

Keynote Speech

Douglas B. MacDonald
Secretary of Transportation
Washington State Department of Transportation

Bellevue, Washington
May 29, 2002

Welcome to everyone at today's conference.

Its topic is critical and timely. And we can already declare the conference a smash success, in my view. Because there will be here today the representatives of so many diverse viewpoints on how to improve our region's transportation system. Much more of this is needed. Discovery and fact-finding. Discussion. Rigor in analysis. Searches for points of agreement as well as disagreement. Respect for diversity of values and competing approaches.

There is on every serious public issue a spectrum represented by discord on one end and consensus on the other. Progress is so much easier when the markers of discussion shift toward consensus and so much harder – to no one's gain – when the motion is in the other direction. It would be hard to look at transportation issues in our region, let alone this country, and take much heart from the pointer's location on the discord-to-consensus spectrum. That is why meetings like this are so important. Inch by inch, perhaps the pointer can move in the direction of greater consensus, or at least toward recognition of opportunities for mutual gains.

About a year ago, I came home to Washington State and the transportation crisis here, espousing a pretty simple formula for how our Department of Transportation could improve its contribution to problem-solving and progress. We at the Department had to fly the flag of *Accountability* on one front fender and the flag of *Project Delivery* on the other.

In a generally tumultuous year, we've made a good start. People have liked the Gray Notebook's head-first dive into performance measures, even as they indulge its work-in-progress quality. They have liked a communications strategy that has faced acknowledged of our bad moments, like the SR529 construction detour problem in Everett and Marysville last summer. As well as our good, like the day-as-to-night success, knock on wood, of the SR529 construction traffic management program this summer for those same communities.

People like a web-based strategy that gets project and program information into the public's hands in plain English and keeps the information current. Most importantly, our forthcoming biennial budget submission, for the first time separately laying out the state's transportation spending into a clear breakdown of operating expenses and capital investment, is, I think, eagerly awaited.

On the project delivery side, projects like the I-405 to SR 167 temporary flyover ramp in Renton, the 38th Street Overpass project last summer in Tacoma, and the Sprague Avenue interchange project in Spokane, as well as many other projects across the state, have shown that "on time and on budget" is a walk we can walk. Even problem projects, like the Issaquah I-90 Sunset Interchange cost bust from unforeseen

geotechnical conditions – in English, buried boulders the size of small houses where the drilled shafts were to be located – have been presented to the public and to elected officials in a straightforward way.

There have been many opportunities in the last year to speak about these goals of WSDOT and our aspirations and progress in moving toward them. But today is different and not as familiar.

Today the topic is not just how WSDOT, the public agency, performs.

This conference has a broader focus. Its topic is how *our transportation system* performs.

Just as a word or two can capture the basic agenda for WSDOT, I want to suggest that a single word can organize most of what needs to be said about our transportation system performance today. That word is *efficiency.* Efficiency is probably the most critical issue in transportation. And efficiency is what value pricing is all about.

Of course, all of us who exercise some measure of stewardship over transportation systems hope that we would be seen as working toward efficiency under any circumstances and conditions. But as we look at our situation today, "efficiency" must be more than just a resonant, all-purpose, mission-statement type buzzword in a Pledge of Allegiance for transportation.

Efficiency is central to the whole transportation enterprise, and it is particularly important in relation to the major investments that we must be considering in our transportation facilities. Efficiency can be measured, evaluated and, most importantly, *chosen* to be part of the investment and improvement strategies that best address transportation needs.

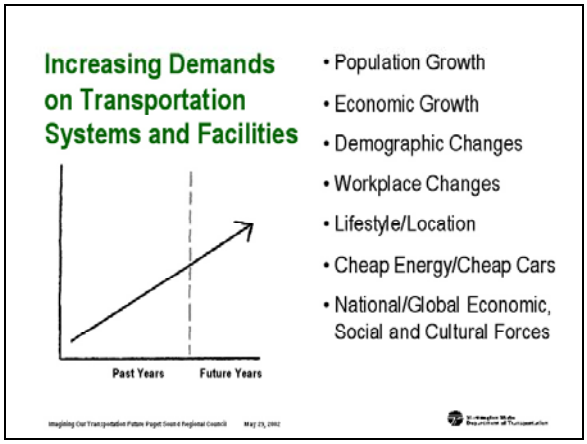
Here, in the simplest possible terms, is why efficiency is the watchword for our forward progress.

Demands on our transportation system are growing in dramatic and inexorable fashion.

We at WSDOT have published many refined graphs and charts, and we have more coming, for example, on freight and shipper issues. All the statistics, however, are easy to summarize.

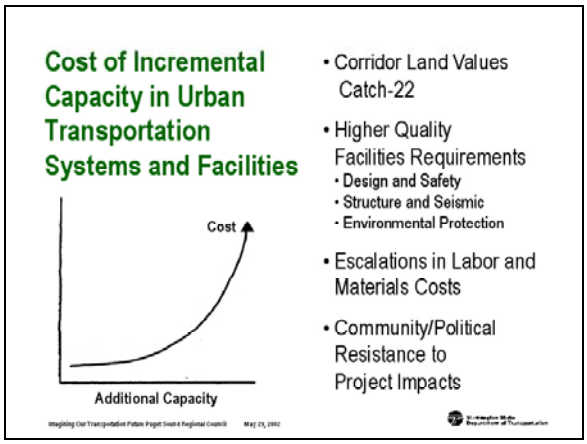
Demand is up

.



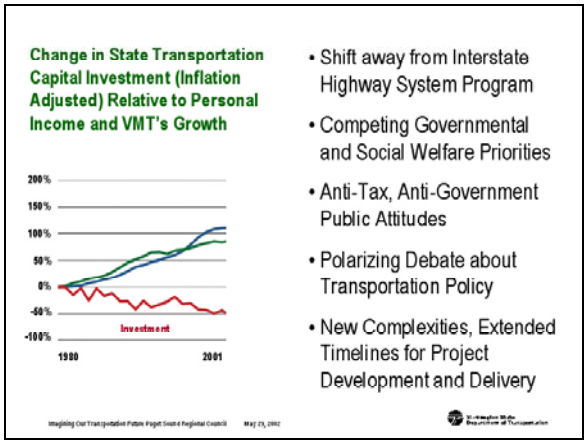
Way up. The reasons are laid out in one convincing form or another in everyone's paper, and speeches on transportation policy.

Next, in any approach to capacity expansion in response to growing demand, we know that the marginal cost of incremental capacity – whatever the mode -- rises geometrically.



By a lot. This, too, is a national, not just a local phenomenon. People with different viewpoints like to stress different reasons, but most of the reasons one hears are true and the debate is about the relative effects of the separate forces that conjoin in these upward cost pressures.

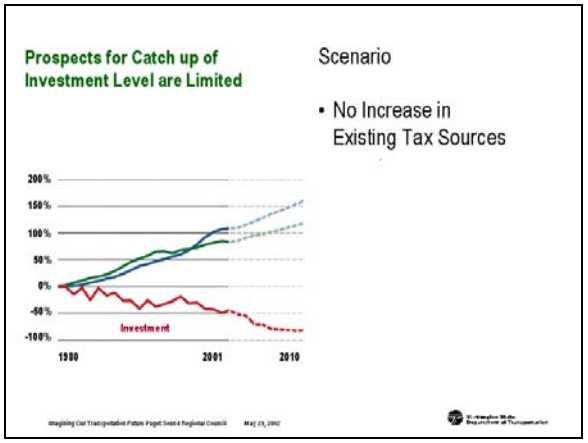
Next, we know that investment levels have not kept pace with demand.



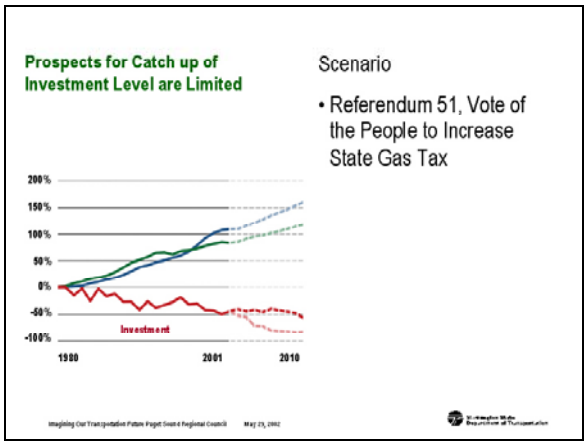
This is true across the nation, not just in Washington State, and it is true across a broad array of infrastructure sectors, not just transportation. The graph is clearly familiar to anyone who has seen our *Overwhelmed Transportation* presentation. The up lines are aggregate personal income on an inflation adjusted basis and vehicle miles traveled. The down line is change in the percentage of every dollar of personal income directed by the state to transportation capital investment.

Nor are investment levels, at least in transportation, soon likely to regain a pace comparable to the increase in demand.

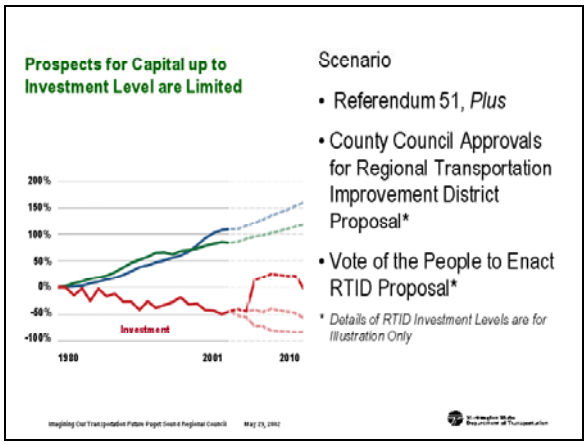
With the funding sources for state transportation spending currently in law in Washington, here is the prospect over the next few years.



Next, we see the pace to be achieved in coming years if the new tax package approved by the legislature last March should be favorably acted upon as Referendum 51 by the voters.



And



Here is the picture – in the most general terms, since details of this are still very much up in the air – should also a regional package for the central Puget Sound area be proposed by Snohomish, King and Pierce country officials and favorably acted upon by the voters at some point.

This is sobering stuff. Regardless of whether new taxes should win, lose, or draw with the voters, the available levels of investment will not be adequate to provide transportation facilities on the old model. We at WSDOT, like many others, believe that the lag in responding to the overwhelming surge of demand makes new highway investment critical at this time.

Nevertheless we must agree that highway building cannot be the sole long-term answer to new heights of demand, to new impacts of congestion, or to inevitable new political pressures that politicians fix the system. That is why a balanced program of transportation investment should be the course we choose.

We should be so blessed. Sometimes we at WSDOT worry about the really stark and problematic message in the patterns of transportation investment now before us. As we debate about what kind of investment – highway improvements or transit, for example – we ought to build, will an even larger crisis overtake us? We should pay more heed to the risky Maelstrom that could suck our transportation infrastructure into a downward spiral, making our current debates seem trivial. A doomsday scenario if more demand placed on aging facilities. A larger and larger share of the available investment devoted to strategies for preservation of existing assets and extension of asset life, less and less money for new assets. Ever higher maintenance spending; ever higher social, economic and environmental costs of facility inadequacy and failure; yet more needs for ever-too-little maintenance. Already in Washington the early eddies of this threatening whirlpool are felt in the year-by-year rising share of capital spending that has been devoted to capital preservation projects rather than to investment in new transportation assets. That's a really bleak prospect and another reason why we must change course.

Those, bluntly, are some of the forces leading to the new course as to which there can be no choice. These forces compel that we must examine every transportation system and facility to test its efficiency and to see whether its efficiency can be improved. We must squeeze more utility out of every asset we already have, and optimize the utility of every new asset we build.

Before turning to value pricing and its importance to transportation efficiency and sensible capital investment, there are two other areas where efficiency issues are motivating major WSDOT initiatives.

The first is our work to improve incident response to the non-recurrent episodes of freeway backups. Here we have the opportunity to capture efficiency by the simple focus on clearing blocking accidents. This involves closer coordination with the State Patrol and local emergency services, better tow truck work, new roving incident response teams and so on. We can and will measure our performance on these operational steps to open the lanes, and get people on their way again. As we began with the most recent Gray Notebook, we will report, for example, the when, where, and why of incidents where we and the State Patrol fall short of our joint public goal of 90 minute maximum clearance times. These management and operational strategies can produce significant gains in highway efficiency.

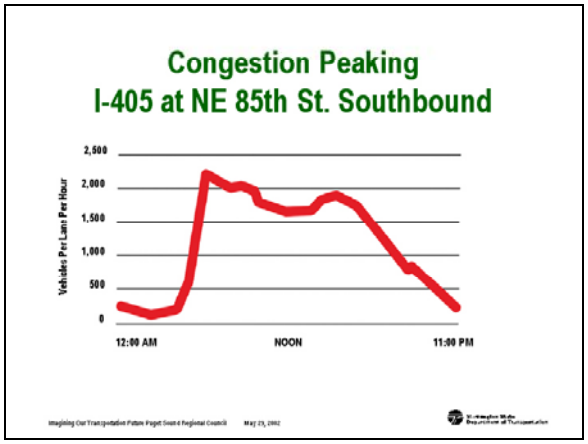
Our second initiative leads from the first. It ties, in fact, to the mantra underlying the entire theory of our new Gray Notebook and the importance of performance measures as a whole. As it says on the first page of every Gray Notebook, *What Gets Measured, Gets Managed*. If we are earnest about managing the efficiency of transportation systems and facilities, then we have to *measure* efficiency. That means we have to find measures that differentiate in our urban highway systems between the efficiency impacts of recurrent congestion and the impacts of non-recurrent congestion. Only then can measures help us select among operational as well as capital strategies to improve efficiency and to test our results. Similarly, our objectives, at least for our urban freeway systems in peak hours, must recognize that efficiency is achieved at maximum throughput of people and goods, which conjure up a very different mental picture of a highway than a race track for single occupancy vehicles moving at "free flow speed."

It is that we may better focus and direct our energies to these challenges that we have recently seceded from sponsorship of the widely-known but methodologically-limited Texas Transportation Institute *Urban Mobility Report.* The TTI Report has not been measuring what we need to achieve, namely a more efficient transportation system. But unfortunately there is no immediately available

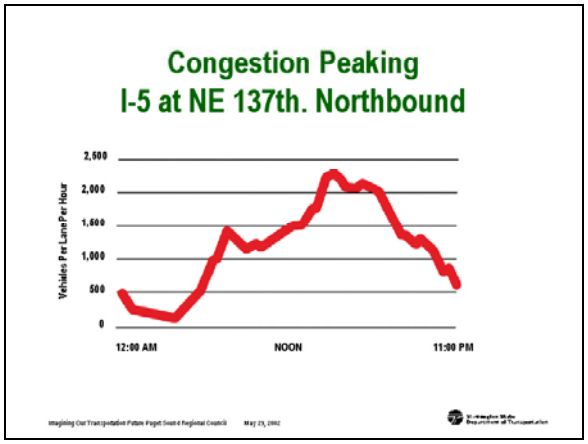
and satisfactory replacement, so we have a lot of work ahead of us in this arena.

From those thoughts about operating our freeways, it is time to look at the graphs that most compellingly make the case for value pricing on transportation facilities. These are graphs, fundamentally, about achieving rationality of investment choices. We built highways, but we don't use them. Or at least not all the time. But when we do, we use them too much!

Here is the fundamental performance picture of I-405 across a typical commuting day.



Another picture shows I-5



This peaking phenomenon is common with respect to a broad array of transportation infrastructure facilities. It is seen on big city airport runways. It is seen in the lock system that supports barge traffic on the Mississippi River. It is characteristic of the operations of natural gas pipelines as to flows and pressures. On roadways, anyone stuck trying to get home from the Memorial Day weekend over the two-lane sections of I-90 east of Snoqualmie Pass knows that this is not a phenomenon limited to weekday urban commuting. Our holiday ferry customers waiting long into the evening to get off the San Juans are fellow sufferers.

And since it is always satisfying to relate the world of transportation to my prior endeavors in the water sector, I recently noted Seattle Public Utilities' deliberations about covering several distribution storage reservoirs to protect water quality. The most interesting problem about distribution water storage is how to size the transmission pipelines from the watersheds in relation to the size of the local storage tanks. Local water storage tanks, after all, are simply the peaking management device so that the transmission pipelines from the watershed reservoirs can be efficiently and economically sized for average daily flow, rather then peak demand. You use the local tanks to meet the peak period demand on the hottest summer afternoon or to provide fire flow requirements for a major conflagration. Efficiency in infrastructure investment. Worth it every time.

It is largely in response to the efficiency opportunities presented by congestion peaking that PSRC has advocated for so long its much-discussed pricing demonstration project. One of the purposes of the Federal Highway Administration is sponsoring this and similar conferences are to stimulate the pilot projects and experiments that will lead us to real-world value pricing opportunities. PSRC's pending proposal will undoubtedly be described in greater detail by others. To me it seems simple and elegant. "Here's some money in a bank account with your name on it. We'll simulate and tell you the congestion prices you would pay to drive various places at various times if a real system were in place. Drive any way and anywhere you like. Keep what you don't spend in our simulation." A lot of thought has gone into this proposal and a lot can be learned from

it. This conference should help give it momentum to move forward.

Value pricing, however, is about more than simply shifting demand away from peaks by creating pricing mechanisms to incorporate the costs that facilities use imposes on others as each new user adds to the congestion delay. Another important idea is that the proceeds of peak time-of-day or peak corridor use fees, that's spelled "T-O-L-L-S," could be used to pay for capacity improvements.

Or, in local English, will tolls be a part of the financing strategy for the Alaskan Way Viaduct, or SR509, or I-405 mega-projects? The simple and correct answer, and almost everyone asked recently reflexively incants it, is "why not?"

This is a much more dangerous answer than it might seem. Not, I feel, because the issues around new tolls are a deadly political third rail. But rather because if you give the answer, "why not," it is entirely appropriate and unavoidable that you will shortly be asked, "Well, what would that mean in terms of tolls, revenues, and capital funding?"

In fact we at WSDOT have recently begun to look at that very question in relation to the Alaskan Way Viaduct program. We have learned from our consultant that the answer is not easy nor will it be entirely welcome. We are still in the process of finishing the study and discussing its ramifications with the City of Seattle and others. I expect we will be able to present more information on the study at the Viaduct's next leadership committee meeting in June. But broad conclusions are not likely to change much even as the report is refined.

First, the profession's modeling capability for toll-traffic-revenue analysis is badly stretched for a project like the Viaduct where diversions to alternate travel routes will be numerous, complicated, and dynamically-interrelated. The financial predictions, at the current state of the art, will necessarily be pretty squishy.

Second, for a short travel distance in a realm of complex alternatives, "what the market will bear" may lead to a surprisingly low throw-off of net revenue. Not enough to leverage more than a modest revenue bond contribution to the multi-billion dollar capitalization of the project. Every project, of course, will be unique, and therefore it remains to be seen how these suggestions will bear out in other project settings

Tolls to help fund the Viaduct: a good idea, but a silver bullet this is not. Another of our toe-dips into the frigid waters of reality as we try to move from good and creative brainstorms to actual strategies and projects in addressing our transportation needs. Those of you who watch WSDOT closely will groan, but not be surprised, when I tell you that last week we decided CEVP needed a younger sibling to be called, naturally, REVP, short for Revenue Estimation Validation Procedure.

Having outlined a few of these issues, there are certainly some important points that I hope will be illuminated at this conference. We all need help with value pricing learning. Here are a few questions I personally hope will be touched upon.

First, what is the reality, if it is to be contrasted with the hype, of the goings-on in other localities? Particularly the 91 Express Lanes in California? The news that Orange County is proposing to de-privatize this facility is interesting, but we would like more information on the relationship between use of the new facility and need for yet additional parallel facilities in the corridor. Apparently this is the problem that is forcing government to buy-out the non-compete covenants made at the outset of the financing. We also hear that a $4.75 toll causes 65 mile per speeds but a $3.75 toll induces enough additional usage to tamp speeds down to in the 40's. What toll/speed differential optimizes traveler timesavings for the whole corridor? What toll/speed differential optimizes revenue to meet financing covenants? What principles are actually being applied to price the facility, with what overall effect on travel and on equity if prices are set as a result of private venturing to yield the lower level of higher priced sales that is the economic reward of the monopolist? These are the kinds of

insights from experience that will help refine our decision-making.

Second, what is the true state of progress and reliability on electronic toll collection technology? Has progress achieved a match with promise? Where should we be positioning our region in the aspirations we have for adapting technology to the intellectual refinements of value pricing theory? When will we know that breakthroughs are truly at hand?

Third, what about HOV lanes and HOT lanes? The issue is all the rage, and of course in Central Puget Sound, where HOV lane debates howl like endless North Pacific gales, no one would want us to be deprived of that discussion. Some articulate proponents are undoubtedly in the audience. Maryland Governor Paris Glendening, who recently vetoed HOT lane proposals on fairness grounds, is not. How far can the HOT lane debate proceed before the irresistible force of economic rationality hits the immovable object of environmental justice?

In thinking last week about this speech, I knew I wanted to close by pronouncing, driven by one's own sense that both public attitudes and technology are moving very fast in this area, that this conference will help break new ground.

But, one of the interesting things about our transportation world here in Washington, is that, beset though we are by gridlock of policy perspectives and hampered by tight financial resources, we have been significant program innovators. Our central Puget Sound ramp meters, for example, are a national model. So, too, our extensive and soon-to-be-completed HOV lane system. So, too, our traffic information systems including one of the leading web-based systems in the country for dispensing information by map, by camera, and by text about the traffic conditions motorists face and traffic engineers must manage.

And so it should come as no surprise that we are also program leaders in transportation value-pricing. Value pricing has already come to transportation systems in Washington state. In fact, we've had a value pricing approach to one important transportation function in place here in Washington for years. You can find it, for example, on football Saturdays at the University of Washington. I met value pricing myself last Saturday, going to the Northwest Folklife Festival. I myself made this record to remind us that we can do it! How about applause for a small platform on which to build our further value pricing experiments and for the Seattle Center and others who are showing the way.

Let's get going. The time has come. We all hope today's conference will help.

Thank you.